VERMONT WIND RESOURCE ASSESSMENT PROJECT

The State of Vermont is proposing to conduct a wind resource assessment to gather data which will further the development of wind energy projects in the state. To accomplish this, the State is partnering on this project with three Vermont companies with considerable wind energy experience. Green Mountain Power Corporation (GMP) is a Vermont electric utility that has recently completed installation of a 6 MW wind energy facility in Searsburg, Vermont. NRG Systems in Hinesburg, Vermont is a world leader in the wind measurement field. NRG will provide the measuring equipment, install it at the selected sites, maintain it and be responsible for maintaining a continuous stream of reliable data. Vermont Environmental Research Associates Inc. (VERA) was responsible for the permitting and development of the Searsburg facility as a contractor to GMP. VERA will be responsible for coordination and management of the overall effort, submitting progress reports and data analysis. Together this team proposes to significantly improve upon the wind measurement data currently available to potential developers of wind energy systems in Vermont.

Wind resource data that currently is available to the public is mostly meteorological data from lower, less windy elevations. This project proposes to expand this database by conducting measurements at five sites throughout the state that are representative of the wind resource needed for commercial wind developments. The data collected will be made available to NREL to update the Vermont information in the U.S. Wind Atlas originally published by NREL. The new measurement sites will be geographically and topographically dispersed: Mt. Mansfield (elev. ~4,000 ft.), central Vermont; Burke Mountain (~3,200 ft.) in northeast Vermont; and a lower elevation ridge (~1,200 ft.) near St. Albans in northwest Vermont, near St. Albans. Two southern Vermont sites are proposed as well. One in Searsburg (~2,800 ft.) and another at Grandpa's Knob (~2,000 ft.) near Rutland Vermont. These sites represent a good cross section of the terrain types suitable for wind development in the state. Wind measurements will be made using modern electronic recording equipment that meets standards recently established by the American Wind Energy Association.

In addition to having excellent wind resource, electric utility restructuring debate in Vermont and other New England states has emphasized a commitment to renewable energy. It is likely that as restructuring legislation continues to develop in New England, a requirement that sellers of electricity in the regional market will be required to have a renewable energy component. This data will be an invaluable aid to a developer interested in locating such a facility in New England.

Data Collection and Analysis

Grandpa's Knob was the site of the pioneering Smith-Putnam project where the first utility scale wind turbine in the United States was installed in the early 1940s. Attachment 1 shows the locatoin of sites with anemometer data collected in the 1940's for the Smith-Putnam project. Measurements at this site proposed in this program will expand the usefulness of the resource estimates conducted in the 1940s and synchronize them with measurements made at the other

sites. Green Mountain Power is proposing to make its existing and future data from its Searsburg site available for the project as an in kind contribution. The northern sites will use existing communications towers as locators for wind measurement equipment.

Data collected will be processed and analyzed by VERA and a consulting wind power meteorologist. The State of Vermont Public Service Department will publish the report. The data will be made available through printed copy as well as on its Internet site. The Department will work with its existing contacts to insure that links are developed between other sites with similar interests.

Timeline

July 1997 - Grant notification received. Contracts signed. Work begins.

August 1997 - Sites surveyed, permission secured for instrumentation

September 1997 - October 1997 - Measurement equipment deployed. Data recording begins and continues through April 1999.

April 1999 - Equipment removed

June 1999 - Data analysis and report preparation

July 1999 - Report issued. Complete data set posted on DPS web pages.